

it in such a way as to carry out the objects of the gift. It will require enclosure, supervision, proper maintenance of drains and the continuance of traditional agricultural usage by annual mowing, and closure to grazing of at least certain parts.

Scientific and Industrial Research in India

In its report which appeared during the War of 1914-18, the Indian Industrial Commission, over which Sir Thomas Holland presided, directed attention to the necessity of establishing a system of organized research if Indian industries were to be adequately developed. Unfortunately, in the post-war period little attention was paid to these recommendations, although in 1937 the late Lord Rutherford in the presidential address which he had prepared for the twenty-fifth meeting of the Indian Science Congress Association once more emphasized how greatly India would benefit by the formation of an organization similar to the Department of Industrial and Scientific Research. The present War, combined with the energy and foresight of the Hon. Dewan Bahadur Sir A. Ramaswamy Mudaliar, now a member of the War Cabinet, provided the necessary stimulus, and on April 1, 1940, the Board and Council of Scientific and Industrial Research was formed by the Government of India. Dr. (now Sir) Shanti Bhatnagar was appointed as the first director. The manifold activities and the great achievements of this research organization, due largely to the energy of its director, are little known in Great Britain, and we welcome, therefore, the new publication, *Journal of Scientific and Industrial Research*, issued by the Council, the first number of which has just been received.

The Board functions largely through a series of committees, some nineteen in number, which range from a Vegetable Oil Committee to one of Radio Research. At the present time, the research work of these various committees is carried out, under the general control of the director, in various university laboratories and at the Indian Institute of Science, Bangalore, but a National Chemical Laboratory is to be opened at Poona. This has been made possible by a munificent gift of 8 lakhs of rupees from Messrs. Tata Sons and 1 lakh of rupees from Messrs. Indian Wire and Steel Products Limited. Articles in the *Journal* discuss the possibilities of the manufacture in India of calcium carbide and thermionic valves and also the utilization of Bhilawan resin as a base for plastics. Interesting articles deal also with established Indian industries such as the Tata Oil Mills and the Juggilal Kamlatpat group of mills. While agriculture must always play a predominant part in Indian economy, with her many resources, she can support also great industries. Doubtless future issues of this journal will furnish us with an account of some of these developed by the new research organization.

Industrial Health Advisory Committee

THE appointment by the Minister of Labour of an Industrial Health Advisory Committee, and the announcement by him of a three-day conference (in April) on industrial health, to which representatives of the Dominions will be invited, as well as representatives of organizations in Great Britain interested in the physical well-being of the working population, indicate a move in the direction of reform long overdue. The rapid mechanization of war, with its

consequent emphasis on accurate large-scale factory work, has directed attention to the time lost in factories through petty illnesses and industrial hazards, mostly preventable. Most, if not all, of these hindrances to production existed in peace-time, but only a life-and-death war, with its vast increase in the factory population, has made it obvious that the standard of health of the factory worker is everybody's business—it is, in fact, a political question. True there are Factory Acts, providing a minimum standard of conditions in factories and protection against many industrial hazards, but their enforcement is entrusted to factory inspectors whose numbers—their zeal has never been in question—are wholly inadequate for the work they have to do. Nor is there much provision for research in industrial health, or much apparatus for the implementation of its findings. One of the duties of this new Committee will be to codify knowledge and help to bring it into use.

A comparatively modern development is the realization of the fact that the health of the worker is not merely the province of medical men and factory inspectors, but also of the worker himself. This is reflected in Mr. Bévin's suggestion that trade unions should take an interest in the preservation of health, and in those from other quarters that workers should help in the defence against industrial hazards and the teaching of industrial hygiene. Mr. Bevin hopes that Government, employers, managers and workpeople will co-operate to the full in providing factory conditions that will make work healthier, safer and more pleasant. The Committee will advise him how the Government can do its part. This valuable co-operation, for these honourable ends, must be continued after the end of the War, through the difficult times of transition and on into the era of peace.

British Council: New Institutes in West Africa

PROF. W. M. MACMILLAN, who has been working for the past two years in the Empire Intelligence Section of the British Broadcasting Corporation, has been selected by the British Council to act as its representative in West Africa. He will leave for the West Coast as soon as possible. His appointment follows a survey recently made by Mr. C. A. F. Dundas, the British Council's representative in the Middle East. It is hoped to establish institutes in the four West African Colonies, to serve as intellectual and cultural centres and to demonstrate the progress made in Britain in the fields of science, pure and applied, literature, art, music and drama. The necessary executive staff is now being assembled. Prof. Macmillan, lately professor of history and research fellow at the University of the Witwatersrand, Johannesburg, is a member of the Colonial Office Advisory Committee on Education in the Colonies. He has spent many years in Africa and several of his books are widely known; they include "Warning from the West Indies" (1936), and "Africa Emergent" (1938).

Mortality and Life Assurance Statistics

Sir William P. Elderton and Mr. M. E. Ogborn read a paper before the Royal Statistical Society on March 16 on "The Mortality of Adult Males since the Middle of the Eighteenth Century as shown by the Experience of Life Assurance Companies". Life assurance as we know it began in 1762, when the Society for Equitable Assurances on Lives

and Survivorships was founded and, until early in the nineteenth century, this was the only company having a substantial number of lives assured on its books. The lives represent a provident type drawn from the professional and business classes, with a sprinkling of landed gentry on one hand and of clerks and servants on the other. Three mortality experiences were quoted: Arthur Morgan's, 1762-1829; H. W. Manly's, 1863-1893; and a recent experience, 1924-1938. The rates of mortality were light and show a steady decrease up to about age 77. In the most recent experience the rates of mortality are about one fourth of those of the first experience up to age 47, and rather less than one half of those of the second experience. The proportional fall decreases at the older ages until there is little change from age 82 onwards. As regards the general population, the English Life Tables Nos. 3, 5 and 10 were used for comparison as they correspond most nearly in date to the assurance experiences. From No. 3 to No. 5 the mortality decreased by about one quarter at early adult ages and by about one tenth between ages 30 and 40. From then onwards No. 5 shows an increase in mortality over No. 3, and even though the methods of construction and reliability differ it seems probable that mortality actually increased. From No. 5 to No. 10 there was a decrease of about one half in the rates of mortality up to age 47, dropping to one tenth at age 77, and showing on the whole a smaller decrease at the later ages. These changes are similar to those between the two corresponding experiences of the assurance offices, though the general population has, as would be expected, a higher mortality than that of lives assured.

Control of Infectious Diseases

IN a Chadwick Lecture given on March 16 by Dr. Robert Cruickshank, of the L.C.C. Group Laboratory, it was stated that although the mortality from infectious diseases has steadily declined in the past half-century, approximately one out of every five deaths is at present due, directly or remotely, to infection. To assess the effect of past measures and as a guide to new methods of control, the bulk of infectious diseases can best be analysed in four main groups: (1) acute respiratory infections; (2) tuberculosis; (3) intestinal infections; and (4) childhood fevers (whooping cough, measles, diphtheria, scarlet fever, in that order of importance). The pneumonias and bronchitis are pre-eminent as a cause of death among the infections (they are third on the list among deaths from all causes); sulphonamides have failed to produce any striking reductions in the death-rate from these causes. A promising beginning has been made in the control of influenza, but the common cold is still a major public health and economic problem.

The upward trend of tuberculosis in war-time—the causes are hypothetical—has helped to accelerate measures for its better control; the role of artificial vaccination needs fresh consideration in Great Britain. Typhoid fever declined sharply coincidental with the introduction of the water-carriage system of sewage disposal, but paratyphoid, bacterial food-poisoning and bacillary dysentery are now more prevalent than they were. Their control will be closely linked with improved personal hygiene, particularly of food-handlers. The highly fatal gastroenteritis of infancy is an unsolved problem needing urgent attention. Whooping cough is the most

serious of childhood infections; it can be prevented or attenuated by prophylactic vaccination. Measles, itself a mild disease, is a menace because of its secondary complications. Diphtheria may not be wholly preventable but should cease to cause death. The means by which improvements in the control of infectious disease can be effected are: (1) administrative regionalization (with the medical officer of health, the practitioner and the bacteriologist as co-operative partners); (2) structural (improved design and equipment of hospital, school and home); (3) educational (of child, parent, nurse, student, medical man); (4) preventive (better feeding, better hygiene, artificial immunization, new methods for the control of air-borne infections).

Mild Winter of 1942-43

THE break in the series of severe war-time winters in Great Britain effected by the mild weather at the end of 1942 and in the early part of 1943 had an interesting effect upon the wild life of the English countryside compared with the previous three winters. Although in Scotland wildfowl and wild geese were reported to have been as numerous as in the previous season, in most parts of England the golden-eye, a characteristically abundant visitor in the previous war winters, was much less numerous. In west Cumberland in the middle of February the hatching of brown trout and sea-trout eggs was reported to be some thirty days in advance of the previous seasons, although in an article on "The Spawning Habits of Salmon" in the *Field* (February 6), G. M. King, clerk to the Dee Fishery Board, contends that in thirty-four years' experience he has failed to find that prevailing weather conditions affect the spawning time of these fish. In other parts of Lakeland there were many plants of red dead nettle, shepherd's purse, red campion, ivy-leaved toadflax, etc., in flower at Christmas. Over England generally the yellow winter jasmine was reported to have given one of the finest flowering displays for many years, and the songs of the song-thrush and skylark commenced several days earlier than usual. The missel-thrush was reported sitting on its nest in North Wales in February, and the song-thrush nest-building in Lancashire on February 6, and sitting on eggs on February 17. In Sussex and most other parts of Great Britain the exceptionally early pairing of partridge was also noted; in Cumberland these birds had paired by Christmas. Another Sussex feature was the early breeding of rabbits. From the Home Counties there were many early reports of hazel flowers, male and female, recorded in the *Times* in January.

Recording Technique in Electro-Biology

AN interesting paper entitled "Amplifying and Recording Technique in Electro-Biology, with Special Reference to the Electrical Activity of the Human Brain" was read by G. Parr and W. Grey Walter at a meeting of the Wireless Section of the Institution of Electrical Engineers on March 3. One of the fundamental properties of the living cell is the production of an electromotive force, which changes when the cell is stimulated into activity. In order to study the nature and magnitude of these biological E.M.F.'s, special amplifying methods and input circuits are required, operating suitable visual, photographic or pen-writing recorders. The paper referred to reviews the standard methods of obtain-